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## NOTES ON THE PASPALI OF LE CONTE'S MONOGRAPH.

BY GEORGE VASEY.

The monograph of U. S. species of the genus *Paspalum*, by Capt. (since Major) Le Conte, was published in the *Journal de Physique*, Paris, vol. 91 (1820). It contains descriptions of eighteen species.

Through the kindness of Mr. J. H. Redfield, all the Lecontean specimens of *Paspalum* in the Herbarium of the Philadelphia Academy of Natural Sciences, have been placed in my hands for examination, and I have given them as careful a revision as I find possible. The result is expressed in the following notes. I have to premise that autograph specimens of some of these species are wanting, and of some others are mixed in the sheet with other species, making it doubtful which was the typical plant. But in most cases the specimens and descriptions enable us satisfactorily to determine the species indicated.

1. *Paspalum præcox*, Walter.

The specimen to which Le Conte's ticket is attached is a form of *P. læve*, Michx., not answering, however, to all the characters given, as the sheaths and leaves are not "*vilosissimus*" and the number of spikes is four instead of three. In the same sheet, however, is another specimen which has hairy leaves and sheaths. Le Conte evidently thought he was describing the plant of Walter, but the description does not answer for the plant which is now accepted as the *P. præcox* of Walter, nor does it agree with the description either of Michaux or Elliott.

2. *P. setaceum*, Michx.

The ticket bearing this name is in a sheet with another bearing the name of the next species, and the plants are all the common erect hairy form of *P. setaceum*, Michx., except one specimen, ticketed *P. ciliatifolium*, from Georgia, and marked "Baldwin." Mr. Le Conte's description answers well to the commonly accepted plant of Michaux, and he gives after his description this reference, "*P. setaceum* et *debile* Michaux, Nova Cesarea ad Floridam," with the mark O for annual, which latter point is open to doubt.

3. *P. ciliatifolium*, Michx.

As above stated, the ticket for this is in the same sheet with the preceding, and if it has not been changed, must apply to the same plant, as the description does not at all apply to the smooth long-leaved specimen of *P. ciliatifolium* from Georgia. Some of the specimens have "spica unica," and some have "spicis 1 sive 2," and some with the usual lateral peduncled ones.

4. *P. longepedunculatum*, Le Conte.

The specimen to which this name is attached is commonly referred to *P. setaceum*, Michx., but is a different form from Nos. 2 and 3, more like the southern *P. ciliatifolium*, but having the leaves shorter and narrower. There are several long peduncled lateral spikes which are not mentioned in the description, the name being based on the "very long peduncled common spike." In Herb. Scribner is a specimen, collected by Mr. Isaac Burk, on the ballast grounds of Philadelphia, which is almost exactly like the Le Contean one, and if *P. ciliatifolium* is considered a species this might be called variety *brevifolia*. At the close of his description Le Conte says "*P. debile*, Muhl. Gram."

5. *P. Floridanum*, Michx.

There are two tickets with this name, one of which is attached to a specimen of *P. racemosum*, Nutt., which specimen does not agree with Le Conte's description; the other is attached to a much smaller plant, very well answering the description of Le Conte but not of Michaux. The specimen is not different apparently from the one to which Le Conte's ticket "*P. præcox*" is attached, which we take to be *Paspalum læve*, Michx., the short broad-leaved form which is perhaps the typical one.

In Herb. Torrey is a specimen of *Paspalum Floridanum* with a note, "not of Le Conte, which is *P. læve*. Ell. i, p. 106, non Michx.?" We see from this note not only that Dr. Torrey referred Le Conte's *P. Floridanum* to *P. læve*, Ell., but also that he had doubt if Elliott's plant was the same as Michaux's.

6. *P. læve*, Michx.

Le Conte's ticket with this name is loose in a sheet with the preceding, the three specimens being apparently all alike except as to the pubescence of the leaves. There is also in another sheet a specimen with the ticket attached, which specimen is the form

of *P. læve*, with long, smooth leaves, not as No. 6 is described with “*foliis latiusculis, brevibus.*”

7. *P. difforme*, Le Conte.

The name as printed is “*clifforme*,” evidently a typographical error. The specimen is intermediate between *P. læve* and *P. Floridanum*, and different from either. Le Conte says, “*Refert P. Floridanum sed spicis erectis, glumisque majoribus facile distinguitur.*” This comparison was evidently made with his No. 5, which was not the *P. Floridanum*, Mx. He also refers *Paspalum* No. 7 of Muhlenberg’s Gram. to this plant, but the description is too obscure to be of any value. We have specimens in the U. S. Herbarium from N. C., and from Florida, which are apparently the same as Le Conte’s plant. They have been referred to *P. Floridanum*, but are clearly different in the smaller size of the plant, in the shorter spikes, and in the much shorter leaves. We have the same plant, also, from Dr. Charles Mohr, Mobile, Ala., who noted that it differed from the *P. Floridanum*. He says *P. Floridanum* blooms from the middle of June to the middle of July, while the other kind begins to flower six or eight weeks later. Altogether it seems that for these specimens Le Conte’s name should be recognized and added to our list.

8. *P. undulosum*, Le Conte.

The specimen over this name is apparently a form of *P. læve*, Michx., with wider and smoother leaves, more numerous and shorter spikes than in the common form. I have seen no other specimens quite matching it, and it may very well be called *P. læve*, variety *undulosum*. The undulate margin of the leaves is also shared by other species. Schultes subsequently published this as *P. Leconteanum* (Mant. 2, 168), probably because Le Conte’s name was too much like *P. undulatum*, Poir.

9. *P. latifolium*, Le Conte.

The specimen with this name looks like a very exuberant *P. ciliatifolium*, with equally small spikelets, but in three or four series. The leaves are about an inch wide, and eight to ten inches long. I have seen no other such specimens, but the general appearance and habit is that of *P. ciliatifolium*, of which it is probably a luxuriant form.

10. *P. virgatum*, Walt.

The ticket bearing this name is loose in a sheet which contains two specimens of *P. plicatulum*, Michx., and two specimens of *P. præcox*, Walt., one of which is ticketed, "Herb. Schw., *P. plicatulum*, Georgia, Hermann." The description seems to refer to what we call *P. præcox*, Walt., "spicis 5-6, alternis, erectis, glumis biseriatis, rachi latiuscula, non flexuosa, dentibus bifloris." Le Conte apparently mistook his No. 1 for *P. præcox*, Walt., and this for *P. virgatum*, Walt. The true *P. virgatum*, Walt., is probably *P. purpurascens*, Ell. Le Conte adds to his description this note, "Calicis valvulæ omnium paspalorum, cuve semina maturescent juxta margines transversæ plicatæ fiunt." If this means that the glumes of all *Paspalum*s when mature have transverse plications such as mark the *P. plicatulum*, Michx., it is a great error.

11. *P. angustifolium*, Le Conte.

The specimen bearing this name is evidently one of the forms commonly called *P. læve*, Michx., having long, narrow and smooth leaves, and three slender spikes three to four inches long. It is quite different from No. 5, which represents a form with much shorter and wider leaves, and which is possibly the typical plant, as Michaux says "foliis breviusculis." No subsequent writer except Elliott, however, quotes these words of Michaux. Gray says "the pretty large and long leaves;" Chapman says "leaves and sheaths smooth or the latter hairy;" Elliott quotes Michaux's words, "leaves short," but does not recognize the plant. It is, therefore, difficult to say precisely what was Michaux's type, and some botanists will prefer to consider this species of Le Conte as a distinct one. Otherwise, it may be distinguished as variety *angustifolium*.

12. *P. gracile*, Le Conte.

The two specimens bearing this name, one ticket marked "*Paspalum gracile* mihi, *P. læve*, Schweinitz," the other "*Paspalum tenue*, Kth., *P. gracile*, Le Conte, 'Durand,'" are clearly what is commonly understood as *P. plicatulum*, Michx., or *P. undulatum*, Poir. Kunth published *P. tenue*, evidently based either on Le Conte's specimens or on the description to which he refers. If Kunth saw the specimens, and they were the same as these in the Herb. Acad. Phil., it is not easy to understand how he should make a new species of them, unless, as may be the fact, Michaux's plant is the *P. purpurascens*, Elliott, in which case indeed another

name would be needed for Le Conte's plant, and as the name *P. gracile* had been earlier appropriated by Rudge for a S. American plant, Kunth distinguished this by the name of *P. tenue*. An inspection of the Le Conte specimens in the Herb. Mus. Paris will probably settle this question. Kunth, however, refers Michaux's *P. plicatulum* not only to *P. purpurascens*, Ell., but also to *P. undulatum*, Poir, as if Michaux had confused two species, which is very likely to be the case. On the other hand, if Kunth saw Le Conte's specimens, and they were like these of the Herb. Acad. Phila., he should have recognized them as the *P. undulatum*, Poir.

Le Conte, at the end of his description of this species, says, "Muhlenberg Gram. sub Paspalo, No. 8," with the description of which Le Conte's does not agree. Furthermore, there is in Herb. Torrey a specimen of *Paspalum setaceum*, Michx., which is also referred to "Pasp. No. 8, Muhl. Gram.," and which agrees sufficiently well with the description.

13. *P. altissimum*, Le Conte.

The single specimen to which this name is attached is evidently what is commonly called *P. Floridanum*, Michx., for which, according to Kunth, the earlier name of *P. macrospermum*, Flugge, must be adopted. Le Conte's specimen has only two spikes, although his description says "spicis 4-5." The species, however, or some forms of it, often have 4 to 5 spikes. One form has pubescent leaves or sheathes, and one form is quite glabrous. Le Conte mistook his No. 5 for *P. Floridanum*, Michx.

14. *P. confertum*, Le Conte.

The specimen to which this name is attached is evidently *P. purpurascens*, Ell. Mr. Durand recognized this and attached a ticket marked "resembling *P. purpurascens*, and I believe identical, E. D." On the same sheet is another specimen of the same species, ticketed "*P. purpurascens*, Ell., Georgia, Dr. Baldwin." Kunth gives both *P. purpurascens*, Ell., and *P. confertum*, Le Conte, as if they were distinct plants. Probably he did not see Le Conte's specimens.

15. *P. distichum*, Linn.

I find no specimens with a ticket in Le Conte's writing, but there are in a sheet marked *P. distichum*, specimens noted as coming from Le Conte, and others, Georgia, Baldwin. The

description of Le Conte seems to refer to *P. distichum*, Linn., but at the end he gives, as a synonym, *Digitaria paspalodes*, Michx., which is understood by Elliott and by Dr. Chapman as applying to *Paspalum Digitaria*, Poir, which seems not to have been known to Le Conte, unless he agreed with Elliott in referring it to the genus *Milium*, in which case it would not appear in a revision of *Paspalum*.

16. *P. tristachyum*, Le Conte.

The specimen bearing this name is apparently a three-spiked form of *P. vaginatum*, Swz. The description also conforms to that species, and Mr. Le Conte adds the remark, "Refert prius sed primo obtuto facile distinguitur, foliis angustis glaberrimis. Habitat in subsalsis, Georgia."

Mr. Bentham considers *P. vaginatum*, Swz., as synonymous with *P. distichum*, Linn., but the two are well defined by Le Conte, and I think are clearly distinct, although with poor or imperfect specimens it is not always easy to discriminate. Although this species commonly has but two spikes, it sometimes occurs with three.

17. *P. membranaceum*, Walt.

I find no specimen of this species with Le Conte's ticket, but from the description, and the reference to *P. vaginatum*, Ell., it is pretty clearly the *P. Walterianum*, Schultes.

18. *P. natans*, Le Conte.

I find no specimen with Le Conte's ticket, but from the description and reference to *P. mucronatum*, Muhl., and the additional notes, it can hardly be doubted that this is the *P. fluitans*, Walt. (*Ceresia fluitans*, Ell.).

Mr. Le Conte undoubtedly observed and collected many of the species of *Paspalum* in Georgia, where he spent many years of his early life; he was also acquainted with Baldwin and Elliott. The latter had already published the earlier numbers of his "Sketch of the Botany of S. Carolina" before the appearance of Le Conte's Monograph, and Elliott is referred to in Le Conte's *Paspalum*, No. 17. Reference is several times made to Pursh and Muhlenberg, whose works had been published but a short time. Michaux described seven species of *Paspalum*, all of which are referred to by Le Conte. Muhlenberg describes ten species, including two to which he gave numbers without specific

names, and to these Le Conte makes reference, No. 7 under his *P. difforme*, and No. 8 under his *P. gracile*, but a comparison of the descriptions does not afford much satisfaction. Elliott described eleven species of *Paspalum*, or thirteen, if we include his *Milium paspalodes* and *Ceresia fluitans*. The monograph of Le Conte enumerates eighteen species, of which four or five had not been previously described and may be counted new species or varieties. All these are indigenous to the Atlantic States; the additional ones of the Southwest had not, probably, been collected at the time of this monograph.